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TAXONOMY OF *EURYTAENIA* (APIACEAE)

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ABSTRACT

Eurytaenia comprises two species, *E. texana* and *E. hinckleyi*, essentially distinguished in morphology only by differences in fruit. *Eurytaenia hinckleyi* is known only from six counties in southwestern Texas and adjacent New Mexico, while *E. texana* is more widespread in Texas and western Oklahoma. A key, descriptions, distribution map, and illustrations of fruits and plants are provided.

KEY WORDS: *Eurytaenia texana*, *Eurytaenia hinckleyi*, Apiaceae, fruit morphology

Eurytaenia has interesting features of morphology and geography. Observations of a taxonomic study of *Eurytaenia* are put on record here in a synopsis of the genus.

EURYTAENIA Torrey & A. Gray, Fl. N. Amer. 1: 633. 1840. **TYPE**: *Eurytaenia texana* Torrey & A. Gray

Annual herbs, aromatic with parsley odor; slender-taprooted. **Stems** 3–12 dm, simple or branching mostly from the base, scabrous-papillate in the inflorescence or completely glabrous or glabrate. **Leaves**: basal 1-pinnate, segments lanceolate to ovate-lanceolate with coarsely serrate margins, cauline 2-pinnate (–3-pinnate) blades ovate in outline, ultimate segments linear to filiform with entire margins; glabrous. **Peduncles** terminal and lateral. **Umbels** once-compound; involucral bracts 3-cleft; involucel bracts entire or 3-cleft, distinctly scarious-margined toward the base. **Flowers**: peripheral and central similar, protandrous; sepals distinct, linear to triangular; petals white, margins entire, apex inflexed; stylopodium depressed-conic, nearly flat. **Schizocarps** splitting, ellipsoid or oblong-ellipsoid to broadly ellipsoid or suborbicular, strongly flattened laterally, dorsal ribs 3, filiform, lateral wings thickened and abruptly or gradually thinning, oil tubes large and flattened, solitary in the intervals, 2 on the commissural face, mericarp dorsal surfaces usually scabrous-papillate; carpophore divided completely to the base along the whole length. **x** = 7. Derivation of name: Greek, *eury*, wide, *tainia*, ribbon or band, alluding to the broad oil tubes, especially those on the commissural faces of *E. texana* mericarps.

In addition to the annual duration and distinctive fruit morphology (Figs. 1, 2), plants of *Eurytaenia* can easily be recognized by their leaf morphology (Figs. 4, 5). The basal are once-compound with the segments lanceolate to ovate-lanceolate and coarsely serrate margined. The cauline become 2-(–3)-pinnate and the segments much narrower with entire margins, the medial and distal with filiform to linear segments. All leaves are usually persistent and the transition in morphology usually is evident on a single plant.

As surely did Coulter & Rose, Mathias, and Constance, I searched for any other feature outside of mature fruit morphology that would distinguish the two species but found none. *Eurytaenia hinckley* is distinct in its mature mericarps that are relatively narrower in shape with relatively narrower bodies, thickened lateral wings, and a thin dermal covering over the dorsal oil tubes; the commissural oil tubes are narrower, differently shaped, and sparsely papillate (Fig. 1). The difference between the two species is remarkably parallel to the difference between *Polytaenia texana* and *P. nuttallii* (Nesom 2012).

Although the mericarp differences show only relatively late in ontogeny, it often is possible to see the developing distinction soon after anthesis. In *Eurytaenia texana* development of the lateral wings is simultaneous at all points from the base to apex. In *Eurytaenia hinckleyi* the thickening begins at the apex (at the mericarp shoulders) and proceeds basipetally.

Figure 1. Mericarps of *Eurytaenia hinckleyi* (A) and *E. texana* (B), dorsal and commissural faces.

Figure 2. Umbellule of schizocarps of *Eurytaenia hinckleyi*. From MO isotype.

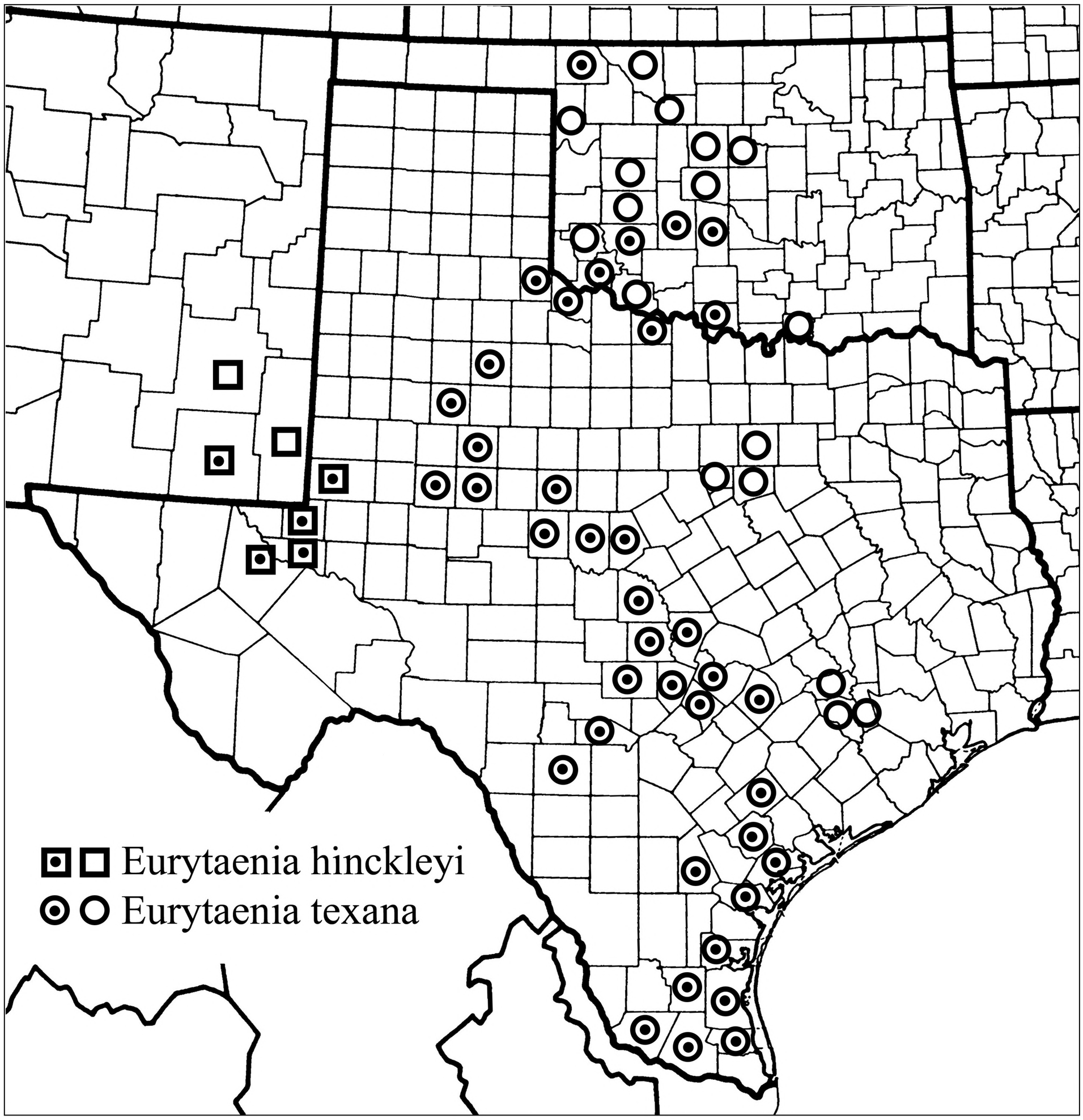

Figure 3. Geographic distribution of *Eurytaenia hinckleyi* and *E. texana*. Symbols without inner dots are from literature records, vouchers not seen. See text (*E. texana*) for documentation of the counties in the two isolated clusters.

1. Mericarps broadly elliptic to suborbicular, thickened near the body but becoming thinner than the body toward the margins; oil tubes not covered by pericarp or epidermis, those of commissural face completely glabrous, depressed semi-circular in outline ..... **Eurytaenia texana**
1. Mericarps ellipsoid to oblong-ellipsoid, thickened to the abruptly narrowed-rounded margins, thicker than the body; oil tubes of both surfaces lightly covered by pericarp or epidermis and papillate, those of commissural face narrowly lenticular in outline ..... **Eurytaenia hinckleyi**

Botanical Research Institute of Texas
HERBARIUM OF LOUISIANA STATE UNIVERSITY IN SHREVEPORT
? M.H. MacRoberts
7/26/2005
PLANTS OF TEXAS
Eurytaenia texana Torr. & Gray
Sandy loam of abandoned field 1.8 air miles west of Post. Elev. approx. 2800 ft.
Corolla white, anthers lavender.
GARZA COUNTY
Bob Hutchins 501 22 May 1965

Figure 4. Representative plant of *Eurytaenia texama*. Garza County, Texas.

HERBARIUM
Southern Methodist University
DALLAS, TEXAS
BARIUM OF THE UNIVERSITY OF CALIFORNIA
EURYTAENIA Hinckleyi sp. nov.
Mildred E. Mathias & Lincoln Constance, 1949.
Eurytaenia texana T. & G.
!.C., 1948.
PLANTS OF TEXAS
HERBARIUM OF SOUTHERN METHODIST UNIVERSITY
Plant umbelliferous; mostly less than 3 dm.
tall; frequent in sand along highway 51.
Ward Co., 3 miles northwest of Monahans.

Figure 5. Representative plant of *Eurytaenia hinckleyi*. Ward County, Texas.

1. **Eurytaenia texana** Torrey & A. Gray, Fl. N. Amer. 1: 633. 1840. **TYPE: USA. Texas**. Austin Co.: San Felipe, 1835, *T. Drummond s.n.* (holotype: GH).
   Eurytaenia macrophylla Buckley, Proc. Acad. Nat. Sci. Philadelphia 13: 455. 1861. **TYPE: USA. Texas**. Washington Co.: no other collection data, ["*Dr. Linsecom*" fide protologue] *Lincecum s.n.* (holotype: PH).

Leaves: blades 4–10 cm x 2–5 cm, lobed or pinnatifid with obtuse, crenate, to serrate lobes, petioles 2–5 cm, cauline pinnately or 3-pinnately dissected, divisions oblong-lanceolate to linear or filiform, margins sharply serrate to entire, terminal often elongate. **Peduncles** 4–15 cm. **Umbels**: involucre of ca. 5 usually 3-cleft bracts 5–10 mm; umbellules 10–26, rays 20–80 mm, strongly unequal; flowers 10–22 per umbellule. **Pedicels** 4–8 mm. **Mericarps** broadly elliptic to suborbicular, 4–6 mm x 4–5 mm, scabrous-papillate dorsally, glabrous on the commissure, lateral wings often purplish, thickened near the body but becoming thinner than the body toward the margins; oil tubes not covered by pericarp or epidermis, dorsal usually papillate, commissural completely glabrous, those of commissural face depressed semi-circular in outline. $2n = 14$ (Bell & Constance 1957).

Flowering (Mar–)Apr–Jul(–Aug). Sand and sandy loam, loose alluvial sand over granite, dune-like deposits, abandoned fields, pastures, roadsides, sandy prairies, mesquite savannas, floodplains, oak-juniper woodlands, live oak-post oak woodlands; (20–)50–900 m; Oklahoma, Texas.

There appears to be a hiatus in distribution of *Eurytaenia texana* between populations of the Coastal Bend area and those of central Texas and western Oklahoma (Fig. 2), and the habitats are generally different between the two areas. No differences in morphology are apparent, however, and all plants are identified as *E. texana*.

Documentation for the seeming disjunct cluster of three eastern counties is by the types of *Eurytaenia texana* (Austin Co.), *E. macrophylla* (Washington Co.), and a citation by Coulter and Rose (1900) — *Hall 256* from Waller Co. (the specimen presumably at US). Records for Hood and Tarrant counties also are documented by citations from Coulter and Rose (1900) — Reverchon in June 1882 and Reverchon in June 1879, respectively.

2. **Eurytaenia hinckleyi** Mathias & Constance, Contr. Texas Res. Found., Bot. Stud. 1: 2. 1950. **TYPE: USA. Texas**. Andrews Co.: Shafter Lake, 10 Jul 1941, *B.C. Tharp s.n.* (holotype: MO digital image!; isotype: SMU!).

Leaves: blades 4–10 cm x 2–5 cm, lobed or pinnatifid with obtuse, crenate, to serrate lobes, petioles 2–5 cm, cauline pinnately or 3-pinnately dissected, divisions oblong-lanceolate to linear or filiform, margins sharply serrate to entire, terminal often elongate. **Peduncles** 4–15 cm. **Umbels**: involucral bracts ca. 5, 5–10 mm; umbellules 4–14, rays 12–45 mm, strongly unequal; flowers (4–)8–22 per umbellule. **Pedicels** 3–4 mm. **Mericarps** ellipsoid to oblong-ellipsoid, 5–8 mm x 4–5 mm, scabrous-papillate dorsally, mostly glabrous on the commissure, lateral wings not purplish, thickened to the abruptly narrowed-rounded margins, thicker than the body; oil tubes of both surfaces lightly covered by pericarp or epidermis and papillate, those of commissural face narrowly lenticular in outline. $2n = 14$ (Bell & Constance 1957).

Flowering May–Jun(–Jul). Loose sand, sandy soil, dunes, openings in sandy mesquite woodland, sandy roadsides, less commonly gravelly soil of limestone hills; 800–1000 m; New Mexico (Chaves, Eddy, and Lea cos.), Texas (Andrews, Reeves, Ward, and Winkler cos.)

All collections of *Eurytaenia hinckleyi* except one have been made from habitats of loose sand — the record from Reeves Co. seems anomalous in habitat but it perhaps demonstrates an

ecological breadth analogous to that of *E. texana*, as noted above. Reeves Co.: near Pecos, abundant in gravelly soil of limestone hills, 1 Jun 1932, *Whitehouse 8371* (SMU).

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